

**Unit 5: Cost Benefit Analysis Assignment**

**1. Create a Marginal Abatement Cost (MAC) curve**

Following the steps in the CBA sheet, generate the MAC curve using the following data for Brazil. *This activity is designed to prepare you to play the Carbon Emissions Game in the next class.*

Abatement Actions	Emissions Reduction (Million tons of carbon)	Total Cost of Reduction (Billions \$)
Build hydropower dams	50	20
Protect the Amazon	30	3
Replace coal-fueled power plants	40	8

**1. Calculate the average cost of abatement for each actions**

Divide the Total Cost of Reduction by the Emissions Reduction for each action. This yields the Average Cost of Reduction.

Abatement Actions	Emissions Reduction (Million tons of carbon)	Average Cost of Reduction (\$ per ton)
Build hydropower dams	50	
Protect the Amazon	30	
Replace coal-fueled power plants	40	

**2. Sort by increasing Average Cost.**

Sort the three actions by increasing Average Cost so that the cheapest abatement actions are taken before the more expensive actions.

Abatement Actions	Emissions Reduction (Million tons of carbon)	Average Cost of Reduction (\$ per ton)

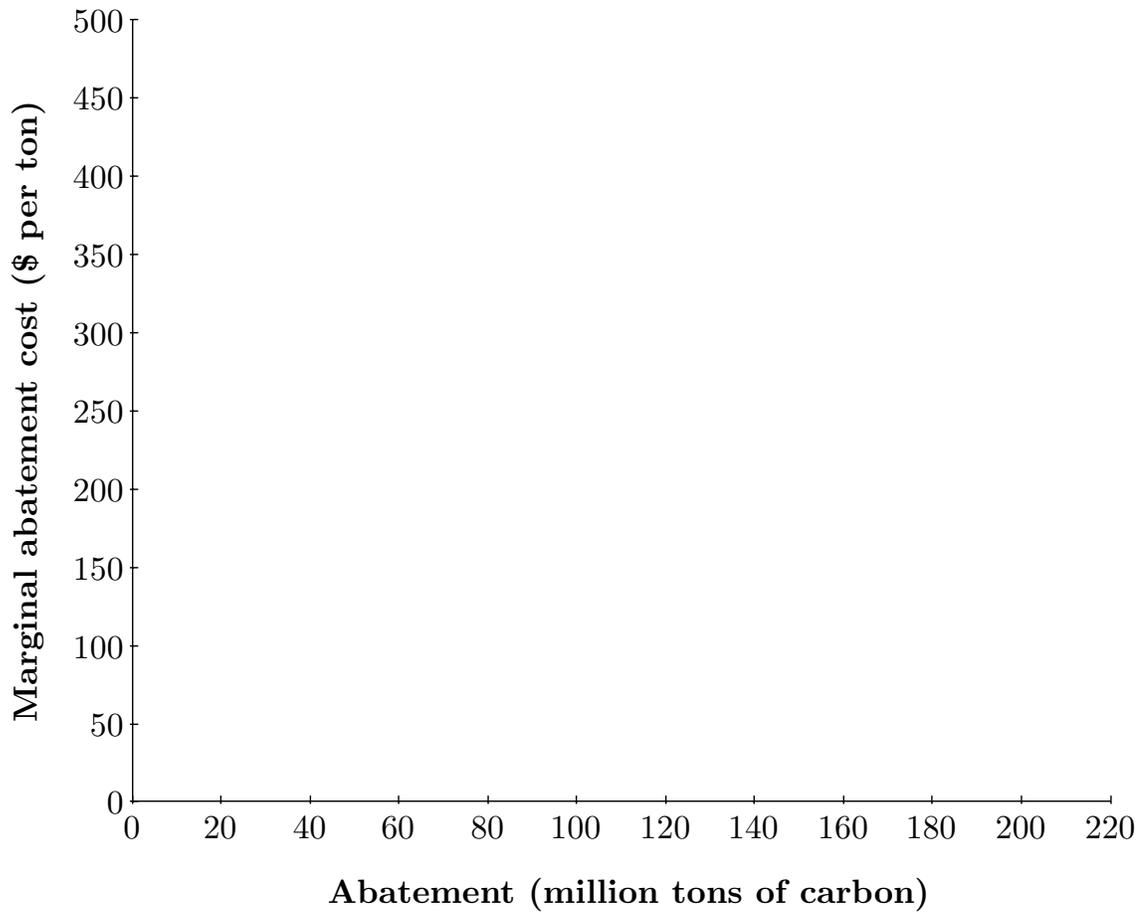
**3. Calculate the cumulative emissions reduction.**

List the actions and their cumulative emissions reduction.

Abatement Actions	Cumulative Emissions Reduction (Million tons of carbon)

**4. Graph the MAC.**

Plot the average cost of reduction against the cumulative emissions reduction potential obtained in step 3.



**5. Short answer questions (attach answers)**

1. What is a market-based policy instrument?
2. Between carbon taxes and emissions trading, which instrument allows regulators greater flexibility?